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ACTIVITY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

The XVth General Assembly of the I. I. A.: Technical Resolutions. — In the Chronicle of June 1940, a brief notice was given of the proceedings of the XVth General Assembly of the Institute.

We now call the attention of our readers to the final text of the most important resolutions of a technical character passed by the Assembly.

These are Resolutions 1, 2, 5, 6, 11, 12, 13, 14, 15:

(1) *The Institute and Economic Reconstruction.*

The General Assembly,

having taken note of the General Statement of the President of the Institute

convinced of the necessity that the International Institute of Agriculture assumes a leading role in the reconstruction period following the present conflict with the aim of putting forward the position of agriculture as a major element of economic stabilization in the world;

gives mandate to the Permanent Committee to prepare a programme of collaboration with other international organizations, in view of economic reconstruction and,

to initiate as soon as possible such studies, as the resources of the Institute will permit, to provide basic facts which will be needed by reconstruction conferences concerned with world agriculture and international trade.

(2) *Membership of Colonies.*

The General Assembly,

having taken note of the General Statement of the President;

recommends that the Permanent Committee and the Presidency shall take steps, as soon as the general political situation permits, to secure the adhesion to the Institute of the colonial countries which are not yet members.

(5) ***Exchange of Information.***

The General Assembly,

in view of the great interest now taken in the rapid spread of new technical processes for improving agricultural production both in quantity and quality;

notes with satisfaction the efforts made by the Institute and the excellent results obtained in the diffusion and propagation of technical information and data;

and recommends that the work thus initiated be actively continued through increased contacts with the agricultural experts of the various countries and facilitated in every possible way by the rapid exchange of agricultural information.

(6) ***Relations with International Organisations.***

The General Assembly,

having taken note of what the Institute has done and proposes to do in the future in the field of cooperation with other international organizations concerned with agriculture and related subjects;

recommends the services of the Institute to persevere along these lines and increasingly to strengthen relations with these international organizations and institutions through the publication of information dealing with the work, meetings, aim and plans of these bodies;

and suggests that the Institute take full cognizance of the opinions of these organizations in all branches of agriculture, and particularly in regard to schemes undertaken by it, or under its auspices, in conformity with section F of article 9 of the Convention of June 7, 1905.

(11) ***The Legislative Protection of Plant Varieties.***

The General Assembly,

requests the International Institute of Agriculture to continue the study of the protection of plant varieties by legislation and to consider at the same time whether the legislative protection of industrial inventions can be extended to inventions of all kinds affecting agriculture.

(12) ***Conditions of Small Farmers.***

The General Assembly,

approves the Report presented in the name of the United States on the subject of subsistence farming;

recognizes the need for studies of the various phases of the subject suggested by the report, particularly of an outline of the best methods of assembling information on the subject;

and publishing it in a form that will be useful to the Governments, and

calls the attention of the Permanent Committee to the proposal, and suggests that the Institute begin such special studies in as far as its resources will allow.

(13) ***Soil Conservation.***

The General Assembly,

after full consideration of the Report presented in the name of the Permanent Committee by Mr A. Maugini, Delegate of the Italian Colonies;

recommends that the International Institute of Agriculture should work in close scientific cooperation with the International Association of Soil Science in matters concerning soil conservation. It further suggests that countries in the temperate regions be included within the field of its study.

(14) ***Agricultural Succession Law.***

The General Assembly,

thanks Mr. van Haastert, Delegate of the Netherlands and the Netherlands Indies, for his interesting report on the evolution of Agricultural succession law, and

in view of the importance of a system of succession law which will strengthen the economic and social position of the farming classes and prevent excessive splitting up of land and indebtedness, and

of the fact that several countries have promulgated special laws or included special regulations in the laws governing common succession;

believes that the study of the development of succession law should be continued

and requests the Permanent Committee to include a study of this problem in the Institute's programme and to publish the results of this study from time to time in the International Review of Agricultural Law;

(15) ***Agricultural Films.***

The General Assembly,

in approving the Report presented in the name of the Permanent Committee by M. Augé Laribé, Delegate of France and French Possessions;

thanks the Administration of the International Institute of Agriculture for its successful organization, despite great difficulties, of the First International Exhibition of Agricultural Films;

thanks and congratulates the producers of the films who have taken part in this competitive exhibition;

thanks the Italian Cinema representatives, including those of the Ministries of Agriculture, Education, Popular Culture, L. U. C. E., E. N. I. C. and others for their splendid cooperation;

suggests that the list of films submitted be published with indications showing which, in the opinion of the jury, complied best with the conditions of the competition;

expresses the view that agricultural films will be still more effective if they are made with the collaboration of experts on films on agriculture and agricultural education;

recommends that the preparation of a list of international films now being compiled by the Bureau of Agricultural Science, be continued with a view to publication in various languages on the occasion of the next international exhibition of agricultural films;

espresses the hope that the Institute will be able to hold regularly on the occasion of each General Assembly, an exhibition similar to that which has just taken place, leaving the Permanent Committee to decide whether on the occasion of the next General Assembly, the conditions for such an exhibition are favourable;

recommends that, for educational purposes, special films *should be made dealing with agricultural industries, and in particular with the dairy industry, which is highly complex and requires special treatment distinct from that given to animal husbandry.*

within the dairy industry itself a distinction must be drawn between the production of milk, the manufacture of dairy products and the place of milk in nutrition.

***

The International Forestry Centre. — The IVth session of the Comitttee of the International Forestry Centre will take place at Budapest from October 22 to 26, 1940. Further details will be given later.

INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1940 No. 9

DISCOVERIES AND CURRENT EVENTS *

ARGENTINE REPUBLIC.

South American Locust (*Schistocerca paranensis*) Invasion †

During the period September 30 to December 31, 1939, flights of *S. paranensis* invaded the Provinces of Córdoba, Santa Fé, San Luis, Buenos Aires and Salta.

Egg-laying was observed in the provinces of Córdoba and Santa Fé over areas of 2,000 and 370 km² respectively; the egg-pods were very close in some places and scattered in others.

As regards the adults that were in San Luis, Salta and Buenos Aires, they moved about in an intermittent manner and in the last province prepared for oviposition.

Towards the middle of October, the flights formed regularly and, after egg-laying, set off towards the North and North-west, having previously made several movements. Other flights turned back according to whether they found weather more or less favourable, which led to flights across the Provinces of Catamarca, Tucumán and Santiago del Estero.

On November 9, the first hatchings were reported in the districts of Los Chañaritos, Pozo del Molle, Santiago Temple, Rio 2 Department, La Tordilla, Department of San Justo, and La Para, Rio 1 Department in the Province of Cordoba. On the 15th of the same month, hatchings continued in the districts of Villa Dolores, San Javier Department, and San Pedro, San Alberto Department in the aforesaid Province.

The Department of Caseros in the Province of Santa Fé, was soon free from adults, some having changed to another area, others either having died or been destroyed. Movements were less active in the Province of San Luis, and egg-laying continued at a normal rate in the Departments of General Perdenera, Colonel Pringles, Chacabuco, San Martín and Ayacucho. In the Province of Buenos Aires, egg-pods were scattered; as a result of the heavy rains, the greater part of the eggs remained sterile and hatchings were of little importance. In the Departments of Banda, Gimenez, Quebrachos, San Martín, Pellegrini

* Under this and the next heading the countries are arranged in French alphabetical order.

† Comunication from Mr. ABEL GOVTIA, Agricultural Engineer, Sub-Director of the 'Defensa Agrícola', Ministry of Agriculture, Buenos Aires, Argentine Republic.

and Ojo de Agua, Province of Santiago del Estero, egg-laying was insignificant. Hatchings were very scattered.

Nymphs were reported towards the end of the period in question in the following Departments:—

Province of Santa Fé: Caseros, General López, Constitución. Not very marked.

Province of Córdoba: San Justo, Rio 1, Rio 2, Santa Maria, Totaral, Pocho, San Alberto, Marcos Juarez, Rio Cuarto, Juarez, Celman, Calamuchita, 3rd Arriba, 3rd Abajo, Unión.

Province of San Luis: General Pedernera, Colonel Pringles, Chacabuco, Junín.

Province of Santiago del Estero: Ojo de Agua. Intensity not very marked.

Province of Tucumán: Burruyacu. Not very marked.

Control was effected by means of flame throwers, barriers, collection and spraying, and a very large number of locusts at their various stages were destroyed Spraying gave the best results as seen from the following table:—

South American locusts (*Schistocerca paranensis*) destroyed from October to December 31, 1939.

	Provinces						
	Buenos-Aires	Santa Fé	Córdoba	San Luis	Santiago del Estero	Tucumán	Total
Spraying by planes and gangs:—		(*a*)	(*b*)				
Adults . . . . . Kg.	—	7,814,925	53,523,000	—	—	—	61,337,925
Ha.	—	2,313	6,544	—	—	—	8,857
Larvae . . . . . Kg.	—	—	21,090,000	—	—	—	21,090,000
Ha.	—	—	3,747	—	—	—	3,747
Nymphs . . . . . Kg.	—	—	115,905,000	—	—	—	115,905,000
Ha.	—	—	14,174	—	—	—	14,174
Larvae and nymphs Kg.	—	—	2,145,500	—	—	—	2,145,500
Ha.	—	—	489	—	—	—	489
Flame throwers, barriers, etc.:—							
Adults . . . . . Kg.	5,665	1,295	—	—	—	—	6,960
Ha.	—	31	—	—	—	—	31
Eggs . . . . . Ha.	346	2,156	29,891	3,109	20	24	35,546
Larvae . . . . . Kg.	—	—	1,150,765	—	—	—	1,150,765
Ha.	—	247	4,340	1,659	—	15	6,261
Nymphs . . . . . Kg.	—	—	4,157,357	65,900	—	—	4,223,257
Ha.	—	—	2,004	668	—	—	2,672

(*a*) Destroyed by plane:— 5,320,000 kg. over 680 ha.

(*b*) Destroyed by plane:— 709,000 kg. over 92 ha.

Amount destroyed by plane:— 6,029,090 kg. over 772 ha.

INDIA AND BURMA.

New Plant Diseases Recorded in 1939 *

Recorded in the Mycology Section of the Imperial Agricultural Research Institute, New Delhi:—

Zea mays L. (Maize)	Root-rot caused by a species of *Pythium* at Sabour (Bihar).
Musa species (Banana)	Plant showing typical symptoms of 'bunchy top' caused by *Musa* virus 1. No experimental work was carried out. The disease is reported to be fairly wide-spread in Bihar.
Solanum tuberosum L. (Potato)	*Phytophthora parasitica* Dast. causing tuber rot and blight, at Simla.
Lycopersicum esculentum Mill. (Tomato)	*P. parasitica* Dast. causing fruit rot, at Simla.
Solanum melongena L. (Brinjal)	*P. parasitica* Dast. emended Ashby, causing fruit rot and leaf blight of young plants and seedlings, at Delhi.

Recorded by A. C. TUNSTALL, Mycologist, Indian Tea Association, Tocklai Experimental Station, Cinnamara, Assam:—

Camellia thea Link (Tea)	Seedling wilt caused by a species of *Phomopsis*.

Recorded by M. J. NARASIMHAN, Deputy Director of Agriculture, Bangalore, Mysore:—

Oryza sativa L. (Paddy)	A disease caused by eelworms, a species of *Tylenchus*.
Piper betle L. (Betel vine) and *Digitalis*	A disease caused by eelworms, *Caconema radicicola*.
Eucalyptus citriodora Hook	A disease caused by bacteria, *Pseudomonas tumefaciens* Smith and Townsend.

Recorded by S. R. BOSE, Professor of Botany, Carmichael Medical College, Calcutta:—

Mikania scandens Willd.	A leaf disease caused by *Cercospora mikaniae* Ell. and Ev.

* Communication from Mr. G. WATTS PADWICK, M. Sc., Ph. D., D. I. C., Imperial Mycologist Imperial Agricultural Research Institute, New Delhi, India.

Recorded by S. P. AGHARKAR, Head of the Department of Botany, Calcutta University:—

Citrus chrysocarpa Lush (Kalimpong orange)	The following fungi isolated from decayed fruits were found to be capable of causing rotting:— *Penicillium expansum* Link. *P. italicum* Wehmer. *P. digitatum* Sacc. *Aspergillus niger* van Tieghem. *Cladosporium herbarum* var. *citricola* Fawcett and Burger. *Trichoderma lignorum* (Tode) Herz. *Colletotrichum gloeosporioides* Penz. *Alternaria citri* Pierce. *Botrytis cinerea* Pers. *Fusarium moniliforme* Sheldon. Spoilage of oranges by some, but not all, of these fungi has been reported before in India. *Penicillium italicum* Wehmer is a new record for India.

Recorded by L. N. SETH, Mycologist, Mandalay, Burma:—

Cajanus cajan (Linn.) Millsp. (Pigeon-pea)	Powdery mildew caused by *Oidium erysiphoides* Fr.

Recorded by K. M. THOMAS, Government Mycologist, Coimbatore, Madras:—

Elettaria cardamomum Maton and White (Cardamom)	Leaf-spot caused by a species of *Pestalozzia*.
Solanum melongena L. (Brinjal)	Little leaf disease caused by a virus. It was successfully transmitted to a number of plants including tomato, tobacco, potato, and chilli.
Oryza sativa L. (Paddy)	'Mota' disease, which appears to be similar to the 'Senthal' disease of rice in Ceylon, causes considerable damage in Coorg.

Recorded in publish literature:—

Gossypium sp. (Cotton)	Stem breaking, caused by high winds.
Mangifera indica L. (Mango)	Twig blight and fruit rot of mango. *Phoma* sp.

SOUTHERN RHODESIA.

Locust Invasion, 1932-1940 *

Monthly Report No. 89. April, 1940.

Winged swarms of the red locust (*Nomadacris septemfasciata*, Serv.) have been reported during the month in the districts of Darwin, Mrewa, Mtoko, Hartley, Chibi, Ndanga and Melsetter (southern part).

Hoppers have been reported in most of the above districts and in addition, in the Salisbury, Marandellas, Charter, Gwelo, Lomagundi and Wankie districts. Apart from the districts of Mtoko, Mrewa, Chibi and southern Melsetter, the hatchings appear to have been relatively light, those in Salisbury and Marandellas districts having occurred only on the extreme boundaries and being almost negligible.

Action has been taken against the hoppers in all infested districts, spraying, baiting and beating down the bands having been adopted according to circumstances. A very large number of bands have been destroyed.

No damage to crops has been reported during the month.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — A Circular of March 11, 1940 of the Head of the Forestry Administration notifies to those concerned that the use of preparations made with copper salts should be reduced to a minimum in the control of plant diseases. As far as possible cupro-calcareous preparations should be utilized instead of copper sulphate. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang Juni 1940, 20. Jahrg., Nr. 6, S. 32).

*** An Amendment of March 26, 1940 to the Ordinance of October 8, 1937 [see this *Bulletin*, 1938, No. 2, pp. 28-29] relative to the control of potato wart disease [*Synchytrium endobioticum*] authorizes the cultivation of the varieties ' Allerfrüheste Gelbe' and 'Centifolia', non-resistant to wart disease, in 1941. Seedlings of these varieties can be sold up to July 1, 1941. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. April 1940, Bd. XII, Nr. 2, S. 24).

*** Ordinance No. 4/40 of March 29, 1940, modifies the regulations regarding trade in potatoes, regulations established by Ordinance of June 20, 1935 [see this *Bulletin*, 1935, No. 9, pp. 203-204]. A minimum diameter of 3.4 cm. for round vareties and 4.5 cm. for oblong varieties is fixed, measurements being taken at the greatest width of the potato. (*Ibid.*).

* Communication from the official correspondent of the Institute, Mr. Rupert W. Jack, F. E. S., Chief Entomologist, Agricultural Laboratory, Department of Agriculture, Salisbury, Southern Rhodesia.

*** A Notice of the Corporation of Agriculture dated May 25, 1940, states that, despite war conditions, the measures adopted for the control of the Colorado beetle [*Leptinotarsa decemlineata*] will be continued in full force.

The 8th Decree of May 21, 1940 relative to the control of the Colorado beetle, with a view to relieving potato growers of this charge, anticipates the possibility of utilizing, if necessary, other persons for surveying work.

In the western areas of the country particularly susceptible to attack, control measures are organized by the Plant Protection Service, while in the region under supervision ('Überwachungsgebiet') which has extended considerably towards the East, the work of finding and destroying as soon as possible all new foci is carried out by a special organization for the control of the Colorado beetle ('Kartoffelabwehrdienst'). (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Nr. 6, S. 32.)

Germany (Protectorate of Bohemia and Moravia). — By Decree No. 133 of February 22, 1940, the Decree No. 167 of July 17, 1925 relative to the control of the potato wart disease (*Synchytrium endobioticum*) has been slightly modified. (*Sammlung der Gesetze und Verordnungen des Protektorates Böhmen und Mähren*, Prag, 20. April 1940, 43. Stück, S. 392).

Colombia. — Decree No. 352 of February 1940 lays down certain measures with a view to facilitating the development of phytosanitary campaigns and to extend the functions of the Provident Section of the Agricultural, Industrial and Mining Loan Bank. (*Diario Oficial*, Bogotá, 26 de febrero de 1940, año LXXV, núm. 24302, pág. 667).

*** Decree No. 438 of March 4, 1940, refers to the continuation of the campaign for the control of the Sigatoka disease [*Cercospora musae*]. (*Ibid.*, 8 marzo de 1940, núm. 24312, págs. 797 y 798).

United States of America. — Inspection of fruits and vegetables offered for entry from Newfoundland during the period since the promulgation of Notice of Quarantine No. 56 governing the importation of fruits and vegetables into the United States, effective on November 1, 1923, indicates that importation of fruits and vegetables from Newfoundland can be safely permitted on a basis comparable to those from Canada.

Amendment No. 1 to the rules and regulations supplemental to Notice of Quarantine No. 56, (as revised effective on December 1, 1936), approved on February 24, 1940 and effective on February 27, 1940, is made therefore to place the entry of fruits and vegetables from Newfoundland and its mainland territory of Labrador on the same status as those from Canada, with the exception of potatoes, which have long been and still are excluded from Newfoundland on account of potato wart [*Synchytrium endobiotium*]. (*B. E. P. Q. — Q. 56*, [Washington, D. C.], 1940, 3 pp.).

*** The coffee industry in Puerto Rico established early in the history of the Island has fortunately remained free from at least two of the world's most destructive coffee pests, the coffee berry borer (*Stephanoderes hampei*) and the coffee rust (*Hemileia vastatrix*).

The object of the Notice of Quarantine No. 73, approved on March 20, 1940 and effective on April 1, 1940, is to ensure the continued freedom of Puerto Rican coffee cultures from these and other coffee insects and diseases by prohibiting or restricting entry into the Island of those coffee materials which might be the means of introducing such pests.

Rules and regulations supplemental to the said Notice of Quarantine have been approved and are effective on the same dates. (*B. E. P. Q. — Q. 73*, [Washington, D. C.], 1940, 2 pp.).

Italy. — By Ministerial Decree of January 1, 1940, the control of the olive fly [*Dacus oleae*] by means of arsenical sprays has been made compulsory in the commune of Pisciotta, Province of Salerno, for the year 1940. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 11 aprile 1940, anno XII, n. 11, pp. 535-536).

*** Ministerial Decree of March 15, 1940 authorizes hunting and capture of wild rabbits in the Province of Ravenna. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 23 marzo 1940, anno 81°, n. 70, p. 1143).

*** Another Ministerial Decree of the same date authorizes the hunting and capture of these animals in the Provinces of Milan and Turin. (*Ibid.*, 25 marzo 1940, n. 71, pp. 1158-1159).

*** By Ministerial Circular No. 470 of March 26, 1940 the provincial Inspectorates of Agriculture are authorized to supervise and inspect experiments on the control of the downy mildew of the vine [*Plasmopara viticola*] and the peacock eye of the olive [*Cycloconium oleaginum*] using mixtures having a reduced copper content or mercurial preparations. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, 11 aprile 1940, n. 10, p. 548).

*** By Ministerial Decree of March 30, 1940, the control of the olive fly [*Dacus oleae*] by arsenical sprays has been made compulsory in the Provinces of Cagliari, Nuoro and Sassari for the year 1940. (*Ibid.*, 11 aprile 1940, n. 11, pp. 533-535).

*** With a view to preventing sparrows damaging early and very early wheats in particular, faculty has been given the administrators of different provinces to authorize the hunting and capture of these birds by any means. (*Giornale di Agricoltura della Domenica*, Roma, 2 giugno 1940, anno L, n. 22, p. 195).

Morocco (French Zone of). — By Order of March 29, 1940, the destruction of rabbits causing serious damage to crops and plantations in certain zones of the civil administrative area of Rabat-banlieue (environs) is authorized. (*Bulletin Officiel*, Rabat, 12 avril 1940, XXIX[e] année, n° 1433, p. 371).

New Zealand. — By special order made by the Papakura Borough Council of February 26, 1940 and published by the Minister of Agriculture on March 29, 1940 all the plants mentioned in the Second Schedule of the Noxious Weeds Act, 1928 are declared to be noxious weeds within the Papakura Borough. (*The New Zealand Gazette*, Wellington, April 4, 1940, Numb. 30, p. 654).

Paraguay. — Decree No. 165 of March 5, 1940 adds to the list of agricultural pests of the country the weevil *Conotrachelus denieri* harmful to cotton. (*Gaceta Oficial de la República del Paraguay*, Asunción, marzo 6 de 1940, núm. 4, pág. 11).

Uruguay. — By Decree of February 21, 1940, the three citrus diseases known as 'lepra explosiva', 'clorosis zonada' and 'psorosis' are declared pests of national agriculture. (*Diario. Oficial de la República Oriental del Uruguay*, Montevideo, 29 de febrero de 1940, tomo 138, núm. 10045, pág. 335-A).

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